Publications by Jared Miller

I. Journal Papers (published)

1) J. Miller and M. Sznaier, "Data-Driven Gain Scheduling Control of Linear Parameter-Varying Systems using Quadratic Matrix Inequalities," *IEEE Control Systems Letters*, 2022. [link] (Early Access)

2) J. Miller, Y. Zheng, M. Sznaier, and A. Papachristodoulou, "Decomposed structured subsets for semidefinite and sum-of-squares optimization," *Automatica*, vol. 137, pp. 110–125, 2022. [link]

3) J. Miller, D. Henrion, and M. Sznaier, "Peak Estimation Recovery and Safety Analysis," *IEEE Control Systems Letters*, vol. 5, no. 6, pp. 1982–1987, 2021. [link]

4) J. Miller, M. A. Al-Radhawi, and E. D. Sontag, "Mediating Ribosomal Competition by Splitting Pools," *IEEE Control Systems Letters*, vol. 5, no. 5, pp. 1555–1560, 2021. [link]

II. Journal Papers (conditionally accepted)

1) J. Miller and M. Sznaier, "Bounding the Distance to Unsafe Sets with Convex Optimization," 2021. [link] (Conditionally accepted by IEEE Transactions on Automatic Control in 2022)

III. Conference Proceedings (published)

1) J. Miller and M. Sznaier, "Facial Input Decompositions for Robust Peak Estimation under Polyhedral Uncertainty," *IFAC-PapersOnLine*, vol. 55, no. 25, pp. 55–60, 2022. [link]

2) J. Miller, D. Henrion, M. Sznaier, and M. Korda, "Peak Estimation for Uncertain and Switched Systems," in *2021 60th IEEE Conference on Decision and Control (CDC)*, pp. 3222–3228, 2021. [link]

3) J. Miller, R. Singh, and M. Sznaier, "MIMO System Identification by Randomized Active-Set Methods," in *2020 59th IEEE Conference on Decision and Control (CDC)*, pp. 2246–2251, 2020. [link]

4) J. Miller, Y. Zheng, M. Sznaier, and A. Papachristodoulou, "Decomposed Structured Subsets for Semidefinite Optimization," in *2020 21st IFAC World Congress*, 2020. [link]

5) C. Wu, J. Miller, Y. Chang, M. Sznaier, and J. Dy, "Solving Interpretable Kernel Dimensionality Reduction," in *Advances in Neural Information Processing Systems* (H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, eds.), vol. 32, pp. 7915–7925, Curran Associates, Inc., 2019. [link]

6) J. Miller, Y. Zheng, B. Roig-Solvas, M. Sznaier, and A. Papachristodoulou, "Chordal Decomposition in Rank Minimized Semidefinite Programs with Applications to Subspace Clustering," in *2019 IEEE 58th Conference on Decision and Control (CDC)*, pp. 4916–4921, 2019. [link]

7) J. Miller and B. Shafai, "A Model of Heave Dynamics for Bagged Air Cushioned Vehicles," in *2019 IEEE Conference on Control Technology and Applications (CCTA)*, pp. 976–981, 2019. [link]

8) B. Taskazan, J. Miller, U. Inyang-Udoh, O. Camps, and M. Sznaier, "Domain Adaptation Based Fault Detection in Label Imbalanced Cyberphysical Systems," in *2019 IEEE Conference on Control Technology and Applications (CCTA)*, pp. 142–147, 2019. [link]

IV. Conference Proceedings (accepted)

1) J. Miller, T. Dai, and M. Sznaier, "Data-Driven Superstabilizing Control of Error-in-Variables Discrete-Time Linear Systems," 2022 (CDC 2022)

2) J. Miller and M. Sznaier, "Bounding the Distance of Closest Approach to Unsafe Sets with Occupation Measures," in *2022 61st IEEE Conference on Decision and Control (CDC)*, 2022 (CDC 2022)

3) F. Bečanović, J. Miller, V. Bonnet, K. Jovanović, and S. Mohammed, "Assessing the Quality of a Set of Basis Functions for Inverse Optimal Control via Projection onto Global Minimizers," 2022 (CDC 2022)

V. Conference Proceedings (submitted)

1) J. Miller and M. Sznaier, "Data-Driven Gain Scheduling Control of Linear Parameter-Varying Systems using Quadratic Matrix Inequalities," *IEEE Control Systems Letters*, 2022. [link] (Early Access)

2) J. Miller, T. Dai, and M. Sznaier, "Superstabilizing Control of Discrete-Time ARX Models under Error in Variables," 2022. [link]

3) A. Epstein, N. Magre, and J. Miller, "Time-Frequency Regularized Overlapping Group Shrinkage," 2022

VI. Preprints

1) T. Imtiaz, M. Kohler, J. Miller, Z. Wang, M. Sznaier, O. Camps, and J. Dy, "SAIF: Sparse Adversarial and Interpretable Attack Framework," 2022. [link]

2) J. Miller, T. Dai, and M. Sznaier, "Data-Driven Stabilizing and Robust Control of Discrete-Time Linear Systems with Error in Variables," 2022. [link]

3) J. Miller and M. Sznaier, "Facial Input Decompositions for Robust Peak and Reachable Set Estimation under Polyhedral Uncertainty," 2021. [link]

VII. Seminars

1) Bounding the Distance to Unsafe Sets with Convex Optimization, DCSD Rising Stars, 2nd Modeling, Estimation and Control Conference, Jersey City, October 2-5 2022. [link]

2) Tutorials about Convexity, Interior Point Methods, Frank-Wolfe algorithms (with applications to system identification), and Polynomial Optimization, June 27, 2022, From Data to Control, Israeli Association of Automatic Control (with M. Sznaier). [link]

3) "Bounding distances to unsafe sets", June 16, 2022, IfA Coffee Talks, ETH Zurich. [link]

4) "Bounding distances to unsafe sets", June 14, 2022, LA3 Meeting, EPFL Lausanne. [link]

5) "Bounding distances to unsafe sets", June 3, 2022, Journées SMAI MODE, University of Limoges (XLIM). [link]

6) Tutorials about Interior Point Methods, Polynomial Optimization, Frank-Wolfe algorithms and variations, and SDP approximations, May 16-20, Sparsity and Big Data in Control, Systems Identification, and Machine Learning, European Embedded Control Institute.

7) "Bounding distances to unsafe sets", April 14, 2022, Conic Linear Optimization for Computer-Assisted Proofs, Mathematisches Forschungsinstitut Oberwolfach (MFO). [link]

8) "Bounding distances to unsafe sets", June 28, 2021, Brainstorming days on measure and polynomial optimization (BrainPOP), LAAS-CNRS. [link]

9) "Data-Driven Peak and Reachability Set Estimation", May 25, 2021, MS112 Methods of Learning Dynamical Systems for Control, SIAM Conference on Dynamical Systems. [link]

10) "Analysis and Control of Time-Delay Systems with Occupation Measures", May 3, 2021, BrainPOP, LAAS-CNRS. Work not yet published, in preparation. [link]
11) "Exploiting Structure in Rank-Constrained and Approximated Semidefinite Programs", December 19, 2019, TISEM Operations Research Seminar, Tilburg University. [link]

VIII. POSTER SESSIONS

1) "Safety Analysis using Distance Estimation and Measures." August 24, 2022. CLEVR-AI MURI Yearly Review Meeting, Northeastern University. [link]
2) "Exploiting SDP Structure Yields Tighter Approximations." April 9, 2020. RISE, Northeastern University (remote). [link]
3) "Exploiting SDP Structure Yields Tighter Approximations." February 24, 2020. IPAM Control, Learning and Optimization workshop, University of California, Los Angeles. [link]
4) "Chordal Decompositions in Rank Minimized SDPs." May 30-31, 2019. Learning for Decision and Control (L4DC), Massachusetts Institute of Technology. [link]
5) "Chordal Decompositions in Rank Minimized SDPs." May 10, 2019. New England Machine Learning Day, Northeastern University. [link]
6) "Scattered data interpolation through B-spline wavelets and the Elastic Net." April 14, 2017. RISE, Northeastern University. [link]
7) "A parallelized Python-based Multi-Point Thomson Scattering analysis in NSTX-U." October 29, 2014. 56th Annual APS Plasma Physics Conference, New Orleans. [link]